

ESTABLISHED 1848

RURAL
WORLD

DEVOTED TO AGRICULTURE HORTICULTURE HORSES CATTLE SHEEP SWINE ETC.

ST. LOUIS, MO. WEDNESDAY, DECEMBER 3, 1902.

Volume LV, No. 49

COLMAN'S RURAL WORLD.

H. J. COLMAN, EDITOR.

Published every Wednesday, in Chemical Building, corner of Eighth and Olive streets, St. Louis, Mo., at one dollar per year. Eastern office, Chalmers B. Colman, 220 Temple Court, New York City. Advertisers will find the RURAL WORLD the best advertising medium of its class in the United States. Address all letters to COLMAN'S RURAL WORLD, Chemical Building, St. Louis, Mo.

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THE MARKETS AND COLD STORAGE.

Cold storage for perishable goods is a modern institution. Twenty years ago when the ice-making machine became a commercial success southern cities began to enjoy the luxury of cheap ice. With the perfection of the ice-machine and its offshoot, the refrigerating machine, cold storage rapidly became popular and cheap in many cities of the United States. Today, in the large commercial centers, millions of dollars worth of perishable products are constantly in the storage rooms of the large refrigerating concerns.

Interesting as the growth of this industry may be, it is but one of the features of the peculiar form of business activity, which adapts so readily means to ends that it may be said to be essentially American. The perfection of cold storage and its establishment as a permanent and prominent factor in the handling of fruits and vegetables, butter and eggs, fish and oysters, etc., has had a profound influence on the prices of these commodities. Its application to transportation by the medium of the refrigerator car has caused a revolution in the business of growing fruits and vegetables, and this subject has been treated exhaustively by our correspondent, Mr. Thomas Lawson, in the article appearing in the RURAL WORLD for July 23d, entitled "The Evolution of Truck Farming."

The changes in the branches of trade and agriculture affected by the passing from old methods of handling perishable products to the modern cold storage system are too numerous and extensive to allow comment here, but the effect on prices is especially marked and is deserving of notice. For example, only a few years ago eggs would be a drug on the market at 60 cents during the laying season and soar to unattainable heights in winter. Now summer eggs bring a good price, as the winter demand for the refrigerator service keeps the price up; while the winter prices are higher they are less than under the old regime and the supply is steadier.

The cold storage system is a great equalizer of prices as well as of temperature. June butter is now coming out of storage and is a great assistance to the consumer in holding values to a moderate level. The producer was helped by the storage demand through the summer season when milk was plentiful and consumptive demand lay below production. As butter comes out, apples are going in and at sixty cents a barrel for the season, investors make good profits and are able to pay better prices to the growers. Consumers are obliged to pay more for apples at this season than under the old system, but the crop will last longer and at uniform rates. Apples were shown at the recent Apple Growers' Congress which had been in cold storage for two years; they were sound and apparently as good as new.

The great cold storage plants of the gigantic beef packing companies enable the packer to hang back thousands of carcasses which not only improve by the chilling and aging, but permit them to be disposed of without loss. At our present day price, it should not be many years before city dwellers can have their cold meat delivered to their houses during hot weather, thus doing away with the ineffectual family ice-box. Then "how'd you like to be the ice man?"

DECEMBER WORK.

Once a year every thrifty merchant has an overhauling of his goods. He calls it "taking account of stock." It is an annual house-cleaning and an invoice combined. He not only gets rid of dust and rubbish but he ascertains how much stock he has on hand and "where he is at." The farmer who likes to know what he is doing, not the sort that "just drifts" will find the month of December an excellent time to take account of stock. He will take account of the mow, rake, blower, plow, harrow and the like, and pack them away under cover where they will do the most good. He will invoice his fences and in order to make a good showing, rotted posts will be carefully

placed on the wood pile and replaced by new ones; wires tightened and new staples applied at critical points; gates put into commission again; nails driven home—all to the credit of the fence department.

In Missouri at least and often in more northerly states, real winter does not strike in much before Christmas. If the annual invoice shows need for stable or shed room, building and repairing in December is not like stealing good planting or harvest time.

The provident farmer, learning where he is at, banks up barns, builds a long-needed manure shed, excavates for his stock-water pond, shucks his corn and puts the stover under cover or in big shocks tied tightly with binder twine, bales his straw, starts the wood-pile to growing and gets ready for the winter hibernation. Winter hibernation is only a joke for the really hustling 12-month farmer. There's no lack of work and yet work does not crowd nor swamp if it is done "scientifically." And that means simply "doing the right thing at the right time." The winter months are spent by the progressive farmer in his "short course in agriculture" after supper by the blazing fire.

This is his time for the cultivation of his crop of ideas. There's no lack of work for the intense farmer in December. Only it's different. And it is this variety, enabling him to change his nerve currents and his muscles which makes the occupation of farming so enticing. The life itself is a compensation where pecuniary profits seem small.

EDUCATE THE FARMER.

Editor RURAL WORLD: The farmer exercises the most potent influence on the industrial welfare of the United States, though he may not fully realize that fact. Much has been said and written about the steel trust and its enormous capitalization, though the welfare of the farmers of the United States at the present day in round numbers is nearly twenty billions of dollars, so even the most powerful trust the world has ever known is small and insignificant when compared with the colossal wealth of the rural districts. While the farmers may never have concentrated their powers and exercised them as the steel trust, there is no reason why they should not exert a more powerful influence on the community of interests in which they live than they do at present. The reason of their failure to do so is chiefly attributable to the fact that the majority of them are not educated specialists in their work; that they have not learned to work in harmony with each other yet and combine to protect and foster their own interests.

Education will solve many of the difficulties that beset the farmer now and will place him on a higher plane of action, a plane where he can see further ahead and so prepare for the future. The ship-master is constantly on the watch looking far ahead for sudden squalls or storms that may arise. Keeping one eye on the glass and one on the wheel, he is prepared for any emergency. Likewise the farmer to succeed must be constantly on his guard, for there are those on every side who are trying to rob him of his just dues. In order to defend himself to the best advantage, it is necessary for him to be as highly educated as the man in any other profession, for the agricultural battles of the future will be fought out by a combination of brain, brawn and muscle. The importance of this education is not an uncommon sight on any railroad in the United States to see forty, fifty or even sixty freight cars hauled by a single powerful engine. The crew of the train consists of some six men and yet they are able to move more freight a greater distance and with greater ease in a day than a thousand teams and men could have done in years that are gone. What is it that enables the accomplishment of this wonderful feat by the railroad train? It is the direct result of the concentration of the educative effort of a single man to harness steam.

Another example which will probably appeal more strongly to the interest of the farmer is found in the cultivation of the cowpea in the south. In 1899 some 77,000 acres were cultivated in this crop, the seed yield being 4,350,000 worth at \$1 a bushel, \$4,350,000. In addition a large amount of hay would be obtained worth about \$10 per ton. But after the grain and hay have been removed, there would still remain on the ground and in the soil a considerable quantity of fallen leaves, stubble and roots of the plant. Now, the cowpea has the power of drawing atmospheric nitrogen from the air and diffusing it through the soil, though it costs about 15 cents per pound in the form of nitrate of soda. It has been shown that even after a crop of cowpeas has been removed as hay containing the grain, twenty pounds of nitrogen to each acre will be left in the fallen leaves, stubble and roots. Accordingly, the cowpea crop of 1899 stored in the soil 15,000,000 pounds of nitrogen, which at 15 cents a pound would be worth \$2,250,000. If the farmers had desired to fertilize their land for wheat, anticipating a twenty-bushel yield, it would have cost them \$2,500,000 to buy the nitrogen alone needed for this purpose. Surely, the cowpea is a wonderful plant and it ought to be cultivated extensively on every farm on which it will grow, especially so as the farmers of the United States last year spent about fifty millions of dollars for commercial fertilizers. As it is, only a comparatively small area is

devoted to the cultivation of the cowpea. Why? Simply because its value as a grain, hay and fertilizer-producing crop is not known. If its virtues were fully recognized and appreciated, it would be grown everywhere. It is not cultivated

there because the majority of our farmers do not understand its virtues and therein is found the best argument for the education of every person in the rural districts. If the farmers are to be educated, now shall it be done? Educate them according to their needs; educate them so as to help them now; educate them so as to put in their hands practical information which they can turn to good account on their farms. For the immediate relief of the farmer who has reached mature years this can best be accomplished through a short course in agriculture. Of course, if a young man has the time and opportunity, he should pursue a long course leading to a liberal education in the true sense of the word, but for the immediate need of the mass of the farmers the short course answers the purpose better than anything else that has been devised.

For the purpose of meeting the needs of the farmers of Tennessee and the South, the University of Tennessee at Knoxville has established short courses which need not cost more than \$10, exclusive of railroad fare. This means about \$1 per week or a little more than a man's living expenses at home. Tuition is free and no entrance examinations are required. Any man or woman over sixteen years of age and having a fair country school education will be admitted to the courses which open on January 31 and continue for a period of ten weeks. The following subjects are taught: Agriculture, animal husbandry, stock judging, dairying, horticulture, veterinary science, agricultural chemistry, mechanic arts, agricultural economics, soil physics, grasses and forage plants, farm management, botany, agricultural engineering, farm law and bookkeeping. A first and second year course is provided and each one includes 40 lectures and exercises on the above topics. As the lectures are given in the form of a syllabus and are illustrated by stereoscopic views, they are easily understood by the student.

Every afternoon the student is required to work with his own hands in the shops or barns; in the soil physics, dairy or stock laboratories; or in the orchard or garden, as the case may be. He thus has an opportunity to make a practical application of the theory he receives in the classroom during the morning exercises. He is thus taught to do things, the only true and rational form of education, and thereby acquires a fund of information of inestimable value to him. The young man who takes one of these courses places himself head and shoulders above the men of his community. He has at his command the accumulated knowledge of thousands of men who have devoted their time and attention to agricultural investigations. He learns about the soil and how to treat it in order to secure the best crops; he learns about the feeding, breeding and the care and management of live stock; he learns how to make good butter and cheese; he learns how to prune and graft and how to spray and care for an orchard. The information he obtains is so intensely practical and is of the greatest value and service to him in his farm life. As the cost is insignificant in comparison with the benefits obtained, no young man can afford to miss the opportunity these courses place before him. Let the young men think seriously about this opportunity and arrange to avail themselves of its privileges the coming winter. They will never regret it.

ANDREW M. SOULE.

NOTES FROM AN OHIO FARM.

Editor RURAL WORLD: It was very easy to see by the last item in "News and Comment," Nov. 19, that Mr. Editor was anything but well pleased with the attendance at the Columbia Dairy meeting, and he asks "Is it that the statement that Missouri is non-progressive is true?" The same question could be asked of any other state in regard to attendance at meetings where matters of most vital importance are to be discussed, and where information upon any question of vital importance can be given by those competent to instruct on any line.

Right there, at that Columbia meeting were present men who could have saved the dairymen of the state tens of thousands of dollars by their instructions along feeding lines alone, and as much more along several other lines of the business. The ones who really do not need instruction are always present. I can call the roll from memory, and I know that the Babcock test, and the milk sheet or record are part of their business methods, while the man who "kin talk good milk by looking at it" and the one who knows that "cann meal will make more milk than bran" was not there and cannot be induced to attend.

It is really a pity that when a man, an association or a newspaper works hard to gather information and give it out, that they must meet with so many discouragements. Every man who has worked along advanced lines, especially in regard to farm methods, can recall the difficulties he has met with.

I say, without boasting, that in my own county to-day are practiced at least five methods in agriculture of which I was the pioneer in several years. At first I was called a "fool," next it was a "lax way," then it "might do some years," and by this time some one

tried it. In another year or two all were willing to adopt it, and without a word of praise for me either.

In almost every community is some long-mouthed, ignorant, self-constituted leader of men. He is usually a man who married a farm and he stands ready to score any one who seeks for higher knowledge. Perhaps this runs in families, for there is one such man in my own county who has done more to discourage farmers' clubs, institutes and the like than any other man in the county, and I found that his brother who lived more than 70 miles west of him was just like him.

We all need to learn more, and to meet together often to exchange ideas in regard to our work, whether it be dairying, orcharding, gardening or just plain farming.

I know that it is pretty hard to keep one's temper after he has traveled 10, 20 or 30 miles to learn something new, to be scoffed at by some ignorant man, or to see an arrogant chap who married a farm, with "Well! I earned it all did ye, reckon ye'll git rich right off now?"

Then it is really consoling to be able to tell him a few years later, when you see him practicing methods you have used all these years, "Yes, I learned that when I was at the meeting you would not attend."

Three miles from me lives a man who sowed 250 worth of Bromus Inermis seed four years ago and never saw a plant of it. Again he sowed 100 pounds of alfalfa on wheat stubble; now he is going to sow 10 acres of alfalfa next spring for his pasture and last week he met him taking home a \$15 aquatic cream separator.

Such fellows will curse their failure and say that they were induced to lose their money by the advice of farm papers, when if the fact were known they never took a farm paper. They mistook the stuff they see in the papers for the real gospel preached by the live farm paper, when in fact such stuff would never deceive the reader of any true farmer's paper.

There is not a farmer in the United States who would not receive useful information at any institute or dairy meeting held in the country, and such meetings can call together only dozens and hundreds while the political speaker or the cheap medicine man can have thousands of attentive listeners.

Missouri farmers are not non-progressive any more than Ohio farmers or New York farmers, but like the latter, they have not learned that the farmers' meetings are for the instruction of all, and that they are attended by the best farmers of the land.

I know that in seasons of good crops and prosperity such as the present year, we are apt to be careless or inattentive to our own interests, but let another season of disaster or drought such as last year come and we note the increased attendance at all farmers' meetings.

C. D. LYON.

PROF. ANDREW M. SOULE.

The accompanying half tone presents a likeness of Prof. Andrew M. Soule, Chairman of the Agricultural Department of the University of Tennessee and Vice Director and Agriculturist of the Tennessee Experiment Station. Mr. Soule was born near Hamilton, Ontario, Canada, in 1872. When he was about 10 years old the family moved to Niagara Falls, South Ontario, where they have since resided. He attended his early public school training. He attended the high school at that place where he prepared for his university work. Mr. Soule was brought up on one of the best stock and fruit farms in the Niagara peninsula, and from his earliest childhood had a great love for nature and for the pursuit of agricultural industries. This led to his early determination to make his future life work one of study and experiment in this interesting and attractive field of investigation.

In 1890 he entered the Ontario agricultural college, situated at Guelph, Ontario, where he secured an associate diploma from that institution. He won the silver medal for general proficiency in his class, and was also first prize essayist in stock husbandry. Following up the good work already begun, he graduated from the university of Toronto in 1893 with the degree of Bachelor of Science in Agriculture. After graduation he returned to his father's farm and studied the practical application of science to agriculture.

In the spring of 1894 he was called to the Missouri Experiment Station as assistant to the director and was placed in charge of the live stock and dairy interests of the station at that place. During his connection with that station he published a valuable treatise on "Dairy Management," based on the results of a series of experiments made while there.

In the fall of 1894 he was chosen Assistant Professor of Agriculture in the Texas College of Agriculture and Experiment Station. This position he held for two years and during that time published a comprehensive work on "The Effect of Food on Economic Dairy Production." In 1896, owing to the increase in the number of students in agriculture, Prof. Soule's work was divided and his whole attention was devoted to agricultural instruction. In this he was very successful and the department rapidly developed, especially those features relative to animal husbandry and dairying.

In the spring of 1899, Prof. Soule was called to occupy his present position in

connection with the University of Tennessee. During his tenure of office there several valuable reports have been issued from his department, including the following bulletins: Experiments with Winter Wheat; Corn, Forage Crops and Spring Cereals; Feeding Native Steers, Parts I and II; Winter Cereals and Legumes; Winter Wheat; The Value of Corn, Blum Milk and Whey for Fattening Swine; The Relative Value of Protein in Cotton Seed Meal, Cowpea, Hay and Wheat Bran; A Farmers' Bulletin on the Conformation of Beef and Dairy Cattle; and several agricultural year books. He has written many articles on education and has reorganized the Department of Agriculture, adding very materially to its equipment and strengthening and adapting the courses to the peculiar needs of the south. Under the present vigorous policy the Tennessee Experiment Station is finding favor with the people of the State, and of the whole country. As an evidence of this it is carrying on extensive co-operative work with the Bureau of Plant Industry, U. S. Department of Agriculture.



PROF. ANDREW M. SOULE.

riculture. Prof. Soule says agricultural education offers the greatest opportunity to the young men of the country at the present time and that the proper way to bring the Station and College of Agriculture in touch with its constituents is through his efforts that it has achieved a national reputation. His sincerity, enthusiasm and strong conviction concerning the value of agricultural education are bearing fruit, and through his efforts a short course in agriculture and the opening of the first dairy school in the south have been accomplished.

FARM YARD MANURE: ITS VALUE AS A FERTILIZER.

By Thomas Lawson.

Editor RURAL WORLD: No country in the world turns out more beef, or a greater volume of dairy products than is produced by the United States of America, and no class of farmers in any country excels those of this country in their utilization of a systematic waste of the raw material which forms the basis of a first class Farm Yard Manure, which is the fertilizer of all others the most esteemed in every intelligent farming community. Even our schools of Technical Agriculture learn it with scant attention, and talk platitudes on chemical fertilizing, when every farmer has the raw material in his possession to make a fertilizer at home, more valuable, more effective, and more lasting in effect than any chemical composition he can purchase, at a cost only of proper facilities, care and labor. Even in the older civilization and on worn out soils of the east where this fertilizer is almost necessary to produce a crop, the majority of the farmers largely disregard the value of this fertilizer through use of imperfect facilities, negligence, or it may be mistaken ideas of hygiene.

Farm yard manure can be produced in every section of the country where cattle are housed or hand fed. A hundred head of average cattle properly cared for during a five months' winter will produce from 500 to 1,000 tons of farm yard manure worth on the average \$1.50 per ton for the fertilization of succeeding crops. There is no soil so rich that farm yard manure will not increase the yield and quality of the crop, and no soil so poor that a liberal application of this fertilizer will not be followed by satisfactory results. Fifteen to twenty tons to the acre of properly prepared farm yard manure as a top dressing to a worn out hay meadow will double or treble its previous product, and the increase be apparent for years. Its

value for fertilizing purposes largely depends on its constituents, its methods of preparation, and the condition in which it is applied.

The solid portion of excreta of cattle has little value as a fertilizer, unless these are being fattened on a liberal nitrogenous ration such as cotton seed meal when a liberal percentage is liable to be unassimilated and pass through giving it a value as a fertilizer, but in young cattle and milk stock the assimilation is usually such as to leave the solid excreta only inert organic matter. The liquid portion, or urine contains the waste of the tissues in the form of urates, and salts which stored in a suitable vehicle and allowed to ferment and undergo a chemical decomposition makes a very rich and effective fertilizer. The art of successfully making a rich fertilizer of this animal excreta is to furnish the necessary vehicle for its absorption, to keep it under cover—that is do not allow the rain to wash the liquid out. Keep it firmly tramped down so that too much fermentation does not set in to generate sufficient heat to evaporate the nitrogen in form of ammonia. A brief description of farm buildings common in the writer's native district thirty years ago, in which preparation of farm yard manure as a staple fertilizer, was brought nearer to a state of practical perfection than ever he has seen elsewhere, will best illustrate the subject matter of this article.

Farm buildings for a farm in ordinary course of cropping containing approximately 200 acres, worth an annual rent of say \$10 to \$15 per acre, would consist of a square of buildings about 200 feet to the side. Three sides of this square were enclosed with solid buildings about 20 feet wide, the entire center of this square was roofed in, carried on pillars. The outer buildings on the three sides were used for stabling horses, cows and steers for fattening; they also contained implement and machinery storage, fertilizer house, fixed power threshing, grinding, chaffing, root pulping and cake crushing machinery, feed storage, straw, grain, etc. The center of the square was divided into four loose yards for stock, equipped with feeding troughs, hay racks and all the conveniences for feeding the cattle with as little labor and disturbance to the stock as possible. The floors of the yards or covered courts as they were called locally, were excavated five or six feet below the level of the outer buildings and also below the general level of the surface on the open side of the square. The floor and sides were securely grouted to keep out bottom water or seepage, the roofs were carefully pitched, so that not a drop of rain water got inside. There was a plentiful supply of roof lights and also roof ventilation, which furnished pure air and plenty of daylight. The urine from the horse, cow and feeders' stables was drained into these covered yards, in each of which were kept from 15 to 20 head of cattle—usually young stock, and the solid excreta was also emptied into and scattered over these yards. These yards were littered every evening with straw to make dry beds for the cattle. The constant tramping of the cattle over this mass pressed it into a solid which was all the more soak full of decomposed urine. This was allowed to accumulate until it rose to the level of the drainage from the stables, five or six feet deep. Then the farmyard manure was carried out to the fields where it was to be applied and dumped in big mounds of two to three hundred tons each, being carted over by the teams before the solid was to be used to tramp it down solid to prevent fermentation. There had previously been a foundation of about six inches of lime and soil compost placed on the foundation of the mound and a covering of a few inches of this compost covered the top of it to prevent the escape of free ammonia gas before the solid was to be used. It was turned over by hand labor with a manure fork and thrown up as loosely as possible and the foundation compost thrown up and spread on top of it to retain the gases. The fermentation then became very rapid and decomposition usually took place in ten days or two weeks. It was ready to apply. The heat and fermentation had made it in a nice condition for distribution. The yards were usually allowed to fill up to the top at the end of the season as farm yard manure fresh from the yard was preferred for application to root crops, and it saved the labor of handling twice.

With the exception of a few inches on top this manure was perfectly rotted, and not a drop of the excreta, either liquid or solid, of these cattle and horses was wasted, and all the rubbish, spoiled straw, hay and all waste was taken into the yards to help absorb it. Where cattle were soiled in summer they were kept in these covered yards and littered with straw, making much valuable manure which was usually applied to the autumn wheat crop in the fall. Such a farm as I describe would usually keep not less than 100 head of average cattle and would produce from 1,200 to 1,800 tons of farm yard manure. Such manure as I describe was worth then and there \$1.75 to \$3 per ton on the farm; that was a usual price paid for it on valuation at the expiration of a lease.

These farmers who had to pay \$10 to \$15 per acre rent could not afford to waste their most valuable asset. Without farm yard manure their crops would not have paid them the expense of cultivation, in addition to this they had to liberally use chemical fertilizers and were regular buyers of cotton and linseed cakes, bran, etc.

(Continued On Eighth Page.)

NEWS AND COMMENT.

Clay Co., Ill., has a crop of 272,770 barrels of apples to her credit this year.

The National Good Roads convention will be held in St. Louis, probably in April next.

The spare turkeys surviving Thanksgiving need not rejoice—Christmas is only three weeks away.

Ten acres will be devoted to a reproduction of the city of Jerusalem at the St. Louis World's Fair in 1904.

Foot and mouth disease is said to be prevalent in some of the Atlantic states. It comes from importations of foreign cattle and Secretary Wilson has imposed a rigid quarantine on future shipments.

It is estimated that Mississippi will market 1,500,000 bales of cotton this season. Other southern crops, as sweet potatoes, sugar cane and peanuts have also made an unusual growth in that section.

Uncle Sam has not decided on a route for his inter-oceanic canal. We trust he is not flitting with Nicaragua or Colombia but it seems to be a case of "how happy I'd be with either were I other dear chum away."

Secretary Wilson announces in an interview: "I no longer oppose reciprocity with Cuba, which contemplates an advantage to that country of 20 per cent of the Dingley rates. I do not now believe that a reduction of 30 per cent in these rates will injure the beet sugar industry."

A good move for any rural community is that undertaken by St. Louis county farmers in the effort to establish a strong organization for mutual protection and welfare. All such efforts are worthy and some day out of these local guilds may come a national organization possessing real power and permanent coherence.

Pity the sorrows of the great. The Czar of Russia intimates that he would willingly abdicate and retire to simple life in a rural community. The trouble about greatness is that it is as hard to let go as it is to achieve distinction by its humbler ones, and not half so much fun trying to step down as struggling to climb up.

Secretary Wilson of the Department of Agriculture has reported favorably on the agricultural and pastoral possibilities of Alaska and congress will be asked to consider measures to open up that region to farmers and stock raisers. It will be found, as in other instances, that Alaska's agricultural wealth will far exceed her mineral products.

A special commission has been appointed by the German government to visit the United States to investigate and study American methods of farming. We have been told that European farm methods were superior to some of the lax usages of this country, but perhaps we order some things better in this new land than they do in the "old country."

Reports from Oklahoma state that the second crop from the orchards and gardens is something remarkable. The virgin soil, the long season, the rapid settlement of this new region by active pioneers permits of an abundance in yield not possible in many sections. Of course the true test of this bumper second crop lies in the unusual rainfall during the autumn months. Not often in December does such news from this latitude go out.

Burglars down in Oklahoma do not bother their professional minds with such trifles as jewelry, plate or coin of the realm. Word comes from Kingfisher that thieves dug up and hauled away \$60 worth of fruit trees. No doubt in order to best adapt their plunder to existing climatic conditions, the next night they broke into two school houses and carried off dictionaries, literary works and apparatus. They must take Horticulture very seriously down in the territory.

Cuba is not completely happy in its republican independence. Cabinet quarrels, labor troubles and other products of civilization are likely to make stormy seas for the young ship of state. The Latin-American people seem not to have yet learned the art of self-government, if their perennial revolutions are any indication. It would be a good thing for them if Uncle Sam should apply the process of "benevolent assimilation," but he has his hands full without adopting any more incorrigible youngsters.

The purchase of 100,000 acres of Kentucky land by a northern syndicate indicates the general activity in real estate operations the country over. Never before was the movement so general or intense. It means a rapid development of natural resources during the next few years. Capital is looking for new fields. Farmers should keep in touch with current events which make the country's history. A close study of changing conditions enables the progressive husbandman to profit from them; otherwise he may be the victim of circumstances "beyond his control."

There is no doubt in the minds of all fair-minded men that Oklahoma has arrived at the stage of growth and population to entitle her to admission as a state. It is also believed that New Mexico and Arizona are justified in claiming this privilege. Congress meets this week and one of the earliest questions coming up for consideration is the matter of statehood for these three territories. We hope that "expediency" in the shape of practical politics will not be a stumbling block in the way of the rights and progress of these enterprising communities of the great Southwest.

DEC. 6 1902

The Dairy

ONE OF THE UNEXPLAINED QUESTIONS.

"Hoard's Dairyman." I would like to know what becomes of the strippings which are sometimes left in a cow's udder? I have often wondered if one would get them at the next milking, though it is claimed that the first milk drawn is of poor quality. Does the cream begin to rise before it is drawn?

Worthington, O. F. R. W.

"This is one of those questions which are concerned, and yet it suggests a very interesting line of inquiry. What does become of the strippings? Practically, we know, and have known for years, that it is very important not to leave any of these strippings in the udder, and the investigations carried on by Dr. Will seem to show that even more attention to this subject than it has heretofore received is both proper and profitable."

We submit the following which answers but does not explain the question of F. R. W.:

The strippings are the cream. Cream rises in the milk ducts so fast as we can show that it does. It is a cow's udder as it does in a cow's udder. Draw off the milk from the bottom and leave some of the cream in the udder and as new milk is elaborated the strippings rise to the top as before. Now somehow in the physiological economy of the milk secreting power of the cow, it is proved that this residue is taken into account and as the process goes on the next day's udderful makes less demand upon the system for fat. It is an automatic adjustment so far as quality goes and each day's test for butter fat would vary but little. Each cow has an idiosyncratic udder, whereby the makes up her daily batch. If strippings are left, next day she is saved that amount of fat ingredient. However, this automatic adjustment device will not tolerate continuous trifling with and as it is a delicate piece of machinery the persistent habit of leaving strippings dries her up. "Don't you want it all?" says Nature, represented by the automatic device. "Well, I'll shut off some of the supply. What! Don't you want even that much? Well I may as well close up the shop and quit business." Then it waits for a new customer that will take the entire output.

12TH ANNUAL MEETING OF MISSOURI STATE DAIRY ASSOCIATION.

First Session Tuesday, 7:30 P. M., Nov. 11, 1902.—Address of Welcome to the State University—By President R. H. Jesse.

Mr. President:

It gives me great pleasure on behalf of the University to welcome the State Dairy Association to the town of Columbia. We invited you because we were earnestly anxious for you to come and we are heartily glad you are here with us.

This is one of the influential organizations of this Commonwealth. Two years ago you determined that there should be a chair of Dairy Husbandry established in the University and the Legislature without the slightest hesitation obeyed your bidding. I wish very much that I could get the State Dairy Association behind everything that the University had to have, get the Legislature as obedient to all your demands as they were to that demand two years ago.

I hope that you are satisfied with the beginning that we have made in the Dairy Department. We are determined to make it one of the foremost features of this college and the College of Agriculture is one of the foremost things in the University. I regret that your meeting should have come just when we have with us a large association of doctors and just when, according to the law of the state, the Board of Visitors of this University has to hold its meeting. My regret is caused by the fact that I cannot be with you as much as I would like to be. I must be with the State Board of Visitors—some, I must be with the doctors—some as much as my health permits—and I cannot attend your sessions nearly so much as I would like to do.

I am very sorry indeed that whether for the coming of these doctors or some other cause, Mrs. Jesse happens to be ill at this time and I cannot on that account show you the hospitality in my house which I would like to show. You know what a house is when the woman in charge of the house is sick and the housekeeper, the house does not run very well. Nevertheless in spite of the doctors and the Board of Visitors and in spite of sickness, we are heartily glad to have in the University as guests of the Institution the members of the State Dairy Association.

The last time you were here I was sitting there where the seat is marked No. 30 and I heard the question gravely asked and gravely debated in this very room by this Association, if not by these particular members here tonight, whether Missouri was a dairy State or not; and I confess that it took my breath away and I said nothing but listened to the debate, and a man whom I regard as a man of considerable experience, seemed to think—at least took the ground—that Missouri was not a dairy State and could not be made a dairy State. Now I sat very humbly at that time and listened to it, but since that time I have been looking into this question myself and I wish here, years afterwards to contradict every man that said Missouri was not a dairy State; for from personal investigation I have it that Missouri is a dairy State and nothing is lacking in the world except the knowledge of dairying and the willingness to go into it the part of men who have the knowledge and the experience.

I was talking with quite a distinguished professor of dairying some time ago on a railway train, and although I had reached my own conclusion, I asked him whether Missouri was a dairy State or not. I knew full well that he was well acquainted with conditions in Wisconsin and in Minnesota and in Iowa which are con-

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For the great mass of farmers and feeders who are always provided with horses, this is undoubtedly the best grinder proposition on the market. It is heavy, strong, grinds very fast and requires the minimum of power. It crushes and grinds corn and other grains, singly or mixed, into perfect feed. Made in several convenient sizes to suit all requirements. We make the most extended and complete line of feed grinders on the market.

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feesidly dairy states, and he said to me that if he were going to establish a dairy of his own, put his own time and money into it, he could rather take his chances in Missouri than in Wisconsin or Minnesota or Iowa; and although I agreed with him, I played hypocrite for a while and argued against the old State to bring him out. I told him that the summers were too long and too hot and too dry and he replied that droughts came in those other states just as often and just as disastrous as they came in Missouri, that longer summers meant forage longer in the fields and more of it; it meant shorter feeding in the winter and less money for the feed for the winter, and as to the grasses, there was no good grass for dairy purposes which those states could grow that Missouri could not grow in equal perfection, and he maintained his ground from start to finish against my hypocritical arguments, declaring that this State was as well fitted for dairy work as any state in the Federal Union. I asked him then why was that Wisconsin was on the whole, according to reputation, ahead of us, and why Minnesota was ahead of us. He said because there were more men in either of these states that understood the dairy business and had faith in it, and that you know to be a fact. The State of Minnesota is largely settled by Scandinavians and the first thing a Scandinavian does when he strikes a piece of dirt is to look around for a cow; they have been trained to dairying from their childhood and a farm means to every Scandinavian some dairy land.

I hope that through our dairy school, which is the child of this association, and through your intelligent and meritorious labors, the knowledge of the dairy industry may be spread far and wide over this Commonwealth until we occupy in dairy production that place which nature has destined that we shall occupy, the place of the leader and not that of the follower. I welcome you most heartily to the city and to the University.

ADDRESS OF WELCOME ON BEHALF OF COLUMBIA.

By George B. Ellis.

Mr. President, Ladies and Gentlemen:

I do not quite understand why I have been called upon to represent the Mayor, but I think perhaps it is an arrangement made by President Smith and Dean Walters. Not being a politician I feel out of place trying to represent the Mayor; and I feel a little embarrassed in following a practical dairy man like Dr. Jesse. But I wish to say in behalf of the Mayor and the good people of Columbia that we extend to you a hearty welcome to this city. The people of Columbia and of every other town and city in the state have a vital interest in the development of all the agricultural interests, one of the most important of which is the dairy interest. Dairy products make up a very important and essential part of our food supply. This little city, with its population transient and resident, of probably about 5,000 people, consumes the product of several hundred cows. The city people are interested not only in the quantity of your products but in the quality, as well. Milk, cream, butter and cheese are important parts of our food ration for it is very hard to have a meal served without some or all of them included.

As city people then we are interested in your work, and we know that whatever benefit you derive from this convention your customers will share that benefit. We are not only interested in your work because you furnish part of our food products, but we have a pecuniary interest in your success. We know that if your business is successful, we will share in that success. The more money you make the more you can spend for other things you need. If you prosper every merchant in this town prospers. Professional men, every manufacturer, every one of our schools, in fact all other industries will share your prosperity, and for that reason we are here to bid you a hearty welcome.

We feel that we are all—both city and country—essential parts of a great state and Missouri, and we trust and have reason to believe that the work of such conventions as your annual meeting, will result in great good to the dairy industry and to the State.

RESPONSE BY MR. J. L. ERWIN, STEEDMAN, MO.

Mr. President, Ladies and Gentlemen, Members of the Association and Citizens of Columbia:

I want to express in the very warmest and kindest and most appreciative way the gratitude and appreciation that we have for the welcome that has been given here tonight. The University of Missouri, the star to which the youth of our land are looking to receive that instruction that is necessary to fit them for the greatest degree of usefulness in life—Columbia, City of Churches, where, while our young men and young women are to be trained for the active duties of life, they are ever reminded that there is a foundation that never fails, that there is a teacher to whom we must all look if we would achieve the greatest degree of usefulness in this life and that will fit us for the duties of citizenship.

I am glad to be here tonight and am especially gratified with a remark that was dropped on the train to-day, as I came up here. I met a representative of the press and we were discussing the Dairy Association of Missouri; he said there is one thing that we have in Missouri that no other state has, and that is that this Association is made up, not of representatives of manufacturing industries for the purpose of selling goods, but it is made up of practical dairymen. Now, fellow citizens, we come here as a set of practical men who have been striving, some of us for years and years, to develop and build up this great State.

While my friend Mr. Ellis was talking with regard to the diversity and value of

this State as a grass and grain producing State, I recalled a visit that I made this fall to my old home in Eastern Ohio. I went back there to see the old home by the spring where I drank when I was a little boy and to look at the shade tree that I planted when I was no larger than my thumb, and to see it grown into a great, big, fine spreading tree near which a gentleman had erected a fine house and turned it so as to make that shade tree appear to be the best possible advantage.

When I left there I thought that the young men who remained there did not have energy enough to get away and that they would take out a starving life among those great high hills, so high it seemed to me I had to look up twice to see the top of them; but they are now looking from top to bottom with grass and I give you my word, fellow citizens, that I did not see as many weeds on five acres of land in Harrison County as are found on almost every farm in any county of the state of Missouri. The weeds and brush are gone and those people for the last 40 years have simply depended upon the grass and have kept the brush and weeds down and the country presented one of the greatest sights I have ever been permitted to witness; and I want to tell you the little county seat that I used to go to when I was a boy has no larger population than 800 people but has a bank whose capital stock is four and one-half million dollars, and these deposits, nearly every dollar of them, are in the bank of the county. How does it grow? How does it come that these people have so much wealth and it all belongs to the farmers? And when I began to think about it, I found that myself how can this happen? We farmers of Missouri have tilled year in and year out with the reaper and the plow and made so little, and how does it come that these people have so much wealth and it all belongs to the farmers? And when I began to think about it, I found that myself how can this happen? 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Horticulture

HORTICULTURAL TALK.

ORCHARD WORK.—If cowpods have been sown in the orchard, now is the time to plow them under providing the work has not already been done. Even if they have been cut out for hay there is still considerable matter left on the ground in the way of stems and leaves which if turned under will form available humus for the next year's crop. Another advantage in fall plowing is that the soil holds moisture better and at the same time the surface dries out quickly, making it possible to plow earlier in the spring. Fall plowing also destroys the larvae of many injurious insects. Should there be any dried up or decayed fruit on or under the trees it should, by some means, be destroyed, preferably burned. This mummified fruit carries the germs of fungi from one year to another and if not destroyed will increase rapidly from year to year.

If you wish to add to your orchard either by filling up vacancies or otherwise, do it now if you have the time, not because trees planted in the fall will grow and thrive any better than those planted in spring, but if done now there is that much more work for your hands in busy spring. Trees should always be planted firmly but especially in the fall is it important to fill in well around the base and spread roots and tramp as solid as possible banking up a little around the body of the tree.

I prefer not to trim fall planted trees much until spring, just before growth starts, at which time the tree should be shaped as nearly as possible according to the way it should grow so as to avoid removing large limbs when the tree grows older. No rule can be laid down for this work as scarcely two trees in a large orchard should be trimmed alike unless they are peach trees in which case I prefer trimming all to a switch the first year. The pruning of apple trees is most important the first few years after planting, after which time there is little to do except to remove suckers and occasional interfering limbs. With the peach the important pruning begins with the second year after planting. At this time the tree should be headed as desired, after which time about one-third of the previous year's growth should be removed annually more or less according to varieties and vigor. In all cases provision should be made for trees to spread and grow larger by leaving certain limbs uncut. It takes a man of judgment and a careful observer of nature to do such work in the best manner.

VEGETABLE NOTES.—The farmer who does not give his family the benefit of a good garden is in a business in which he does not deserve and cannot have the highest success, says "Home and Farm."

Clean up the garden spot. If any weeds have been allowed to go to seed they should be burned in order to destroy the seed which would otherwise be troublesome next season.

Probably the squash and pumpkin vines have been infested with insects which are harboring there on the old vines preparing to attack the new ones. Destroy them in this manner. Better set out a hill of new seeds than to risk the loss of the old ones. Make a clean job of the bugs. Melon vines having shown blight or mildew should be burned also.

Prepare for some nice fresh lettuce during the winter. If you have been careless enough not to clean up the garden after the early vegetables have matured, and the allowed the lettuce to go to seed you may take advantage of your neglect by taking up the nice thrifty plants you will find growing there where nature scattered the seed, and setting them close together in a cold frame. Glass is of course best to cover with but if you have none, boards will do very nicely. Lettuce is a cool climate plant and does not need much protection. Should you have no such convenient place to get plants, prepare a hot bed by putting in just enough manure to furnish heat sufficient to start the seed. Boston Market is the best variety for heading in winter. Boards are wanted, plants nicely transplanted into frames a few inches apart. For growing thickly in beds Deacon and Simpson are among the best.

A great deal of satisfaction may be had by setting a few plants of parsley in a large flower pot or a neat shallow box to be placed in the kitchen window; besides, being an ornament the box will find it very convenient to nip off bits of fresh parsley for flavoring soups, salads, etc.

Don't be afraid of adding too much fertility to the garden spot. Make it a dumping place for everything about your premises that will decompose quickly, if not already so, that is rich in humus and the other elements essential to plant production. Nowhere will the heavy feeding of soil give better return than on the garden spot.

CAUTION.—It is now time that a good many RURAL WORLD readers were preparing for severe winter weather. Better see if there are not some window lights missing and to replace them and how about that cellar door? Does it not need a little attention? By all means see that the animals are comfortable.

EDWIN H. RIEHL.
North Alton, Ill., Nov. 24.

"THE BEN DAVIS IS DOOMED."

Editor RURAL WORLD: Under the above caption an article appeared in your issue of Oct. 22 from the pen of P. M. Kieley. The article is well timed and of supreme importance to those planning for commercial purposes. But it falls to persuade that we make any mistake in planting the Ben Davis in Missouri. It is not my object to "answer," according to newspaper parlance, the article, but to make some suggestions why it is so difficult to relegate to the rear such an article. If these objections can be overcome, then myself and thousands of others who are increasing their holdings for commercial purposes, will forget the poor old, despised B. D. Commercial enterprises are engaged in for pleasure and profit. In the abstract there is no such pleasure in growing one kind of apple as another; but as a matter of practical business the pleasure is generally in proportion to the profit. So we might, as a starting point, say the question is one simply of profit. Is the Ben Davis the most profitable commercial apple for Missouri? I write from a Missouri standpoint only.

I refer you to Bulletin No. 3, June 1902, of the Missouri Fruit State Experiment Station at Mt. Grove, Mo. The object of that Bulletin was to induce the Ben Davis article to induce beginners in commercial orcharding to select right varieties. Mr. Stinson sent me inquiries to about 75 fruit growers asking them to

A Golden Rule of Agriculture:

Be good to your land and your crop will be good. Plenty of

Potash

In the fertilizer spells quality and quantity in the harvest. Write us and we will send you, free, by next mail, our money winning book.

GERMAN KALI WORKS,
91 Newark Street,
New York.

make lists of apples recommended for commercial purposes. Concerning the lists furnished by his correspondents, Mr. Stinson says they correspond with the information collected by the station from personal investigation. Replies of B. I. are given.

Every one recommends the Ben Davis. And this list of B. I. contains the names of such men as N. F. Murray, J. C. Evans, F. H. Speakman, J. E. Thompson, W. G. Gano, L. A. Goodman, D. A. Robinson and 24 other successful orchardists in different parts of Missouri. I want to make one reference out of Missouri, because he ought to be in Missouri—Mr. Wellhouse of Kansas. In a later issue I find this: "Mr. Wellhouse has found the Ben Davis apple to be the most profitable, while the Jonathan has yielded more bushels to the acre. Missouri Pippin comes second in yield and the Ben Davis third. But the best price and most appreciative and active market is for Ben Davis. On Fairmount Hill, near Leavenworth, he has erected a large packing and drying plant and his shipments of fruit are made to St. Louis, Kansas City, Chicago, New York, Boston and foreign points. He also has a large trade in dried apples."

Today I met Col. W. W. Johnson of this place, a successful apple grower for 15 years, and asked him what apple he found the most profitable, and he promptly answered the Ben Davis. No amount of questioning would make him vary a particle. However, he made a suggestion which I think valuable; that it was a good idea to plant separate orchards, of different varieties, so as to always have a crop, and a steady income. He added: "While I would not recommend anyone to plant the Ingram, yet one year this variety bore when no other did and the price was exceedingly good. I expect to next plant an orchard of the Jonathan." Asked if they were as profitable as Ben Davis, the reply came: "No, but I may get a crop when others fail."

Referring to quality Mr. Kieley says the Ben Davis is "hardly fit to eat and cook." I again refer to same Bulletin. The same contributors were asked to make a list of apples for family use. Of the 31 reported, 15 gave the Ben Davis a place in his list—a very substantial majority.

Your contributor in support of his contention that the Ben Davis was a bad seller gave us these quotations: Huntman's Favorite, \$3.50; Grimes' Golden, \$3.00; Jonathan, \$2.50 to \$3.75; Rome Beauty, \$2.00; Willow Twig, \$2.00 to \$2.50; Winesap, Northern Spy, Missouri Pippin, Gano and similar varieties, \$2.00, and Ben Davis \$1.50. Now mark you, these are St. Louis quotations. What did the grower get? I do not know how it is elsewhere, but in this part of the state, he got no more for some varieties than for the Ben Davis, and for some of them less per barrel. And not only that, but a larger percentage of culls were left on the hands of the grower than from the Ben Davis. The grower is willing to do his part in cultivating a taste for better apples and believes, as your correspondent says, that the consumer is willing to pay more for them, but if he cannot afford in the increased price he cannot afford to raise these better apples.

In the same bulletin you will learn the contributors also made a list of apples they had tried and would not plant again because not profitable. Hunting the lists for those quoted by Mr. Kieley we find one would not plant Grimes' Golden, one the Jonathan, six the Rome Beauty, 17 the Willow Twig, four the Winesap, one the Northern Spy, five the Missouri Pippin, none the Gano and eight the Huntman's Favorite. I admit this is not a conclusive showing as to all these varieties because it does not appear how many of each of these varieties each planted. But when out of 31 fruit growers so many have planted and refuse to plant again the Rome Beauty, Willow Twig, Missouri Pippin and Huntman's Favorite we are justified in saying the last named are not profitable from a commercial standpoint.

This article is not written in a controversial spirit, but the writer is one among the hundreds in the Ozark country planting commercial orchards and above all things desires to plant the right varieties for profit. I will close this article by asking any one to name the apple that combines so many good qualities as the Ben Davis in this to-wit: is so hardy, so well suited to the various soils of Missouri, that grows so symmetrical with so little pruning, that fruits so early and frequently, that distributes its fruit so uniformly over the tree and puts an apple at the end of a twig rather than in clusters or on lateral twigs, that so seldom breaks from over-ripening, whose fruit is so large and uniform in shape and size, of good color and that bears handling so well? If you answer "none" then name the one that comes next to it.

E. B. KELLERMAN.
Lebanon, Mo.

A GIANT CASTOR BEAN.

Editor RURAL WORLD: The parable of the mustard seed is not in it, in comparison with an unusual plant growth at 3667 Kennerly ave., St. Louis. It grew from a castor bean, but has no beans on it. Although other plants around it have seeds. Here are its dimensions: Height 13 feet; circumference at the ground, 11 inches; largest limb, 6 inches. The whole thing looks so uncommon to me that I write to you about it.

B. C. BYRNE.

A great book is like a torrent. It sweeps all before it. It is a flood of knowledge and light. A newspaper is like the constant dropping of water upon a stone. By keeping it continually at it an impression is finally made on the hardest heart.

FLOWER NOTES.

Editor RURAL WORLD: It is not yet too late to prepare some growing cheer for the home windows during the coming dreary months. While it is best to begin in May with tender Begonias and Geraniums for the following winter's window garden one can have a cheery window without using either of the above excellent varieties. First, for certainty to bloom, and little care, will come the common bulbs. If you have Narcissus, Daffodils, Tulips or Crocuses among your border plants, select a few of the plump bulbs, pot them in rich, loose soil, aiming to cover them as deeply as they were in the beds, water and set away under some shrubs or in the cellar or a dark closet, until top growth begins, then bring to the windows, giving them sun and warmth gradually. The more sun, heat and water that is given, the sooner will the blossoms come, but too great haste will always result in inferior blossoms.

If there is no border to go to, a few dimes will result in dollars of beauty if wisely invested: Purchase some white Roman Hyacinths, one of the sweetest and surest of blossoms, and some pink Oxalis. Floribunda (flowers in abundance), pot as directed for home bulbs, give the same care excepting the Oxalis will come into top growth at once and it need not be taken away to grow first. Always provide good drainage for any plant. I prefer wood charcoal to other drainage.

If the Hyacinth bulbs seem to choke, try to open when low down in the plant place a brown paper cone over the bud a few days. This will cause it to stretch up for the light.

We don't want to depend entirely upon bulbs for they are comparatively short-lived, so come again to the border. Take up carefully and pot in loose rich soil, small plants of petunia, a single red and a red and white variegated one, in the same can will half fill a window with bloom all winter, and verbenas, if there are no small plants, take up your favorite one, cutting back all old growth. Soon they will start vigorous new growth.

Take up nice, thrifty budded plants of snap-dragon—Antirrhinum and Dianthus pink, these two will hardly be out of bloom all winter, and verbenas, if there are no small plants, take up your favorite one, cutting back all old growth. Soon they will start vigorous new growth. Take up nice, thrifty budded plants of snap-dragon—Antirrhinum and Dianthus pink, these two will hardly be out of bloom all winter, and verbenas, if there are no small plants, take up your favorite one, cutting back all old growth. Soon they will start vigorous new growth.

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"THE PROFESSIONAL MAN AS AN ORCHARDIST."

(Response to toast by Albert Blair of St. Louis, at the Shaw Banquet, Nov. 13, 1902.)

When a man gets up to speak on a specific text assigned to him, if on unfamiliar ground, he sometimes feels tempted to act as does a nervous horse when hitched to a post, that is, to find out at once how long the halter strap is and how much range he can take up. Upon occasion I shall not try to prance round very much, for the prancer sometimes gets wound up, or throws himself. The toast presents the idea of a professional man stepping aside from his vocation and devoting part of his time, at least, to the growth of an orchard. Now, the words, "professional man," are indeed, presumable, to mean a member of one of the learned professions. Formerly there were but a few vocations that were styled learned, and the term was generally limited to doctors, lawyers, preachers and college professors. The toast seems to imply that orchard growing is not a learned profession. Now from what I do know about law as a learned profession, and from what I do know and do not know about fruit growing, I am disposed to amend the phrase and submit for consideration the spectacle of a man accustomed to city life and indoor work, whose studies are chiefly reflective, and not practical, turning to an avocation in which physical conditions, ever changing, control success; a vocation which in these times calls for much information of a technical character concerning the operations of Nature over a wide range in all of her three kingdoms. Then I should say that the city professional man should take heed, when he undertakes fruit growing, at least in commercial proportions, that he must apply himself to the mastery of a learned profession. What is there to learn? It is impossible to embody in a single statement a reply sufficiently comprehensive.

The orchardist should know the good and the harm the all-compelling sun can do. And so with the rain and the wind and the frost, and that at one hour they help and at another they injure. Evaporation, constant and invisible, is potent for evil and for good, yet how can it be promoted and checked? Fruit planning, mulching, draining and fertilizing are processes of culture, each with its own problems. One may know something of the nature of nitrogen, potash and phosphorus as soil ingredients, but whether required in any given case, or how best applied, are sometimes matters of doubt or difficulty. Delayed with these questions you yet get up upon the threshold of your academy. Enter the main building and take a look at the countless broods and swarms of the articulate of the animal kingdom—your fellow joint-tenants; joint-tenants, indeed, who have a prescriptive right to hatch and burrow and suck and sting upon any part of your trees and fruits. "Go to the ant and con-

sider her ways and be wise," says Scripture. More than that is required of the fruit grower. He must consider six-legged, untold varieties, the various Coleoptera, Hymenoptera, Diptera, Aptera, and other biters, not omitting the borer, the codling moth, the tree trimmer, the caterpillar and the woolly aphid. And you will not be allowed your diploma until you have had practical experience with rabbits, moles, field mice, blue mold, bitter rot, scale, scab and their antidotes.

It seems to me that an apple orchard is liable to more diseases than is a baby. Sometimes I think my orchard would pass for a high-class museum of animated nature.

The problem of how to produce fruit is the main one. How to harvest and sell the crop are also important, if less perplexing. The existence of the vast array of adverse forces is proof that the price is well worth great study and effort. In recent years orderly observation and experiment along scientific lines have brought us most valuable remedies. Let us honor the botanists and entomologists who have been doing so much for us in these respects.

What I have said may be familiar enough to all present. As an amateur I did not hope to instruct you. Had I the time and the power of word-building, I might undertake to beguile you for a moment by picturing the orchardist as a litigant—come into court where there is pending a bill of interpleader, the question being who shall be the beneficiaries of the orchard. Benign Dame Nature sits as an arbiter to hear and award. The owner of the land, who pays the taxes and does the work, has started out with the idea that he is justly entitled to all the benefits. He urges in support of his petition how he has labored to produce the crop. But at the trial he is amazed at the array of counter-claimants. They too must be considered. Counsel in their behalf might urge that they were aboriginal and that they were on the ground first. In support of their ancient rights it may be alleged historically that they were in undisputed possession of the Crab orchards of the Susquehanna before the Saxon had set foot on Plymouth, or the Spaniard had crossed the sea (as Macaulay might say), and that they will thrive in undiminished vigor on the slopes of the Ozarks, when some traveler from New Zealand shall point his alpenhorn over the ruins of the Relay House to snap-shoot a broken arch of the St. Louis bridge.

Who can say they are useless in the general scheme of things? In the long and complex evolution of organic life, including man, may they not serve a useful purpose? So it is that Dame Nature looking broadly into the far future, beneficently decrees that they shall share with man in the fruits of the field.

So I conclude that the practical orchardist is a member of a learned profession, at least, and that he should be treated as such.

Usually but an amateur, but in my conclusion, say a word as to how it comes about that some of us, dwellers in the cities, betake ourselves to rural enterprises. So far as lawyers are concerned, it is their habit to concern themselves with other people's affairs, but seldom so with their own. The truth is that many of us in the cities are to the manner born. We are rural by birth, farmers somewhat by training, but unprovided with farms, as some of you more fortunate ones were, we drifted into other lines. For a few years the glamour of city life awakes us. In-time we perceive the artificial and fleeting character of many of its charms. As the years advance our thoughts often revert to the scenes of our childhood: "The orchard, the meadow, the deep-tangled wildwood," and so it comes about that we find a deep satisfaction in building and planting in the country.

I am glad that the first Congress of American Apple Growers has been held in this city, in the state of Missouri. We owe much to other states for their achievements in apple culture. Massachusetts gave up the Baldwin, the apple so much prized by our friends in the East. New York gave us the Northern Spy and the Newtown Pippin, the latter said to be the king of apples. New Jersey gave us the Belleflower and the Maiden Blush. Virginia, the Albemarle Pippin and Grimes' Golden. Kentucky, the Ben Davis, unequalled for profit. Missouri has produced the Missouri Pippin and the Northern Spy, and herself first in rank as the land of the big red apples and of the big yielding orchards that produce them.

THIRTY YEARS IN GINSENG.

That a good deal of money can be made from the cultivation of ginseng, is a fact but one must go about it in the right way to insure success. Hence the advertisement of the City Dale Ginseng Gardens, Office: 329 N. Main Street, St. Louis, is recommended to all readers interested in this subject. The writer has been acquainted with the principal proprietor of these gardens for a quarter of a century and knows him to be thoroughly reliable in every way; at the same time, he is the oldest and heaviest dealer in Ginseng in the West. He is not taking orders for seed and plants and guarantee them to be true American Ginseng. The seed is fresh, the plants vigorous and the warrant of the coheer and their responsibility leaves nothing to be desired. For price and full particulars address as above.

KANSAS HORTICULTURAL SOCIETY.

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Editor RURAL WORLD: It is not yet too late to prepare some growing cheer for the home windows during the coming dreary months. While it is best to begin in May with tender Begonias and Geraniums for the following winter's window garden one can have a cheery window without using either of the above excellent varieties. First, for certainty to bloom, and little care, will come the common bulbs. If you have Narcissus, Daffodils, Tulips or Crocuses among your border plants, select a few of the plump bulbs, pot them in rich, loose soil, aiming to cover them as deeply as they were in the beds, water and set away under some shrubs or in the cellar or a dark closet, until top growth begins, then bring to the windows, giving them sun and warmth gradually. The more sun, heat and water that is given, the sooner will the blossoms come, but too great haste will always result in inferior blossoms.

If there is no border to go to, a few dimes will result in dollars of beauty if wisely invested: Purchase some white Roman Hyacinths, one of the sweetest and surest of blossoms, and some pink Oxalis. Floribunda (flowers in abundance), pot as directed for home bulbs, give the same care excepting the Oxalis will come into top growth at once and it need not be taken away to grow first. Always provide good drainage for any plant. I prefer wood charcoal to other drainage.

If the Hyacinth bulbs seem to choke, try to open when low down in the plant place a brown paper cone over the bud a few days. This will cause it to stretch up for the light.

We don't want to depend entirely upon bulbs for they are comparatively short-lived, so come again to the border. Take up carefully and pot in loose rich soil, small plants of petunia, a single red and a red and white variegated one, in the same can will half fill a window with bloom all winter, and verbenas, if there are no small plants, take up your favorite one, cutting back all old growth. Soon they will start vigorous new growth.

Take up nice, thrifty budded plants of snap-dragon—Antirrhinum and Dianthus pink, these two will hardly be out of bloom all winter, and verbenas, if there are no small plants, take up your favorite one, cutting back all old growth. Soon they will start vigorous new growth.

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"THE PROFESSIONAL MAN AS AN ORCHARDIST."

(Response to toast by Albert Blair of St. Louis, at the Shaw Banquet, Nov. 13, 1902.)

When a man gets up to speak on a specific text assigned to him, if on unfamiliar ground, he sometimes feels tempted to act as does a nervous horse when hitched to a post, that is, to find out at once how long the halter strap is and how much range he can take up. Upon occasion I shall not try to prance round very much, for the prancer sometimes gets wound up, or throws himself. The toast presents the idea of a professional man stepping aside from his vocation and devoting part of his time, at least, to the growth of an orchard. Now, the words, "professional man," are indeed, presumable, to mean a member of one of the learned professions. Formerly there were but a few vocations that were styled learned, and the term was generally limited to doctors, lawyers, preachers and college professors. The toast seems to imply that orchard growing is not a learned profession. Now from what I do know about law as a learned profession, and from what I do know and do not know about fruit growing, I am disposed to amend the phrase and submit for consideration the spectacle of a man accustomed to city life and indoor work, whose studies are chiefly reflective, and not practical, turning to an avocation in which physical conditions, ever changing, control success; a vocation which in these times calls for much information of a technical character concerning the operations of Nature over a wide range in all of her three kingdoms. Then I should say that the city professional man should take heed, when he undertakes fruit growing, at least in commercial proportions, that he must apply himself to the mastery of a learned profession. What is there to learn? It is impossible to embody in a single statement a reply sufficiently comprehensive.

The orchardist should know the good and the harm the all-compelling sun can do. And so with the rain and the wind and the frost, and that at one hour they help and at another they injure. Evaporation, constant and invisible, is potent for evil and for good, yet how can it be promoted and checked? Fruit planning, mulching, draining and fertilizing are processes of culture, each with its own problems. One may know something of the nature of nitrogen, potash and phosphorus as soil ingredients, but whether required in any given case, or how best applied, are sometimes matters of doubt or difficulty. Delayed with these questions you yet get up upon the threshold of your academy. Enter the main building and take a look at the countless broods and swarms of the articulate of the animal kingdom—your fellow joint-tenants; joint-tenants, indeed, who have a prescriptive right to hatch and burrow and suck and sting upon any part of your trees and fruits. "Go to the ant and con-

sider her ways and be wise," says Scripture. More than that is required of the fruit grower. He must consider six-legged, untold varieties, the various Coleoptera, Hymenoptera, Diptera, Aptera, and other biters, not omitting the borer, the codling moth, the tree trimmer, the caterpillar and the woolly aphid. And you will not be allowed your diploma until you have had practical experience with rabbits, moles, field mice, blue mold, bitter rot, scale, scab and their antidotes.

It seems to me that an apple orchard is liable to more diseases than is a baby. Sometimes I think my orchard would pass for a high-class museum of animated nature.

The problem of how to produce fruit is the main one. How to harvest and sell the crop are also important, if less perplexing. The existence of the vast array of adverse forces is proof that the price is well worth great study and effort. In recent years orderly observation and experiment along scientific lines have brought us most valuable remedies. Let us honor the botanists and entomologists who have been doing so much for us in these respects.

What I have said may be familiar enough to all present. As an amateur I did not hope to instruct you. Had I the time and the power of word-building, I might undertake to beguile you for a moment by picturing the orchardist as a litigant—come into court where there is pending a bill of interpleader, the question being who shall be the beneficiaries of the orchard. Benign Dame Nature sits as an arbiter to hear and award. The owner of the land, who pays the taxes and does the work, has started out with the idea that he is justly entitled to all the benefits. He urges in support of his petition how he has labored to produce the crop. But at the trial he is amazed at the array of counter-claimants. They too must be considered. Counsel in their behalf might urge that they were aboriginal and that they were on the ground first. In support of their ancient rights it may be alleged historically that they were in undisputed possession of the Crab orchards of the Susquehanna before the Saxon had set foot on Plymouth, or the Spaniard had crossed the sea (as Macaulay might say), and that they will thrive in undiminished vigor on the slopes of the Ozarks, when some traveler from New Zealand shall point his alpenhorn over the ruins of the Relay House to snap-shoot a broken arch of the St. Louis bridge.

Who can say they are useless in the general scheme of things? In the long and complex evolution of organic life, including man, may they not serve a useful purpose? So it is that Dame Nature looking broadly into the far future, beneficently decrees that they shall share with man in the fruits of the field.

So I conclude that the practical orchardist is a member of a learned profession, at least, and that he should be treated as such.

Usually but an amateur, but in my conclusion, say a word as to how it comes about that some of us, dwellers in the cities, betake ourselves to rural enterprises. So far as lawyers are concerned, it is their habit to concern themselves with other people's affairs, but seldom so with their own. The truth is that many of us in the cities are to the manner born. We are rural by birth, farmers somewhat by training, but unprovided with farms, as some of you more fortunate ones were, we drifted into other lines. For a few years the glamour of city life awakes us. In-time we perceive the artificial and fleeting character of many of its charms. As the years advance our thoughts often revert to the scenes of our childhood: "The orchard, the meadow, the deep-tangled wildwood," and so it comes about that we find a deep satisfaction in building and planting in the country.

I am glad that the first Congress of American Apple Growers has been held in this city, in the state of Missouri. We owe much to other states for their achievements in apple culture. Massachusetts gave up the Baldwin, the apple so much prized by our friends in the East. New York gave us the Northern Spy and the Newtown Pippin, the latter said to be the king of apples. New Jersey gave us the Belleflower and the Maiden Blush. Virginia, the Albemarle Pippin and Grimes' Golden. Kentucky, the Ben Davis, unequalled for profit. Missouri has produced the Missouri Pippin and the Northern Spy, and herself first in rank as the land of the big red apples and of the big yielding orchards that produce them.

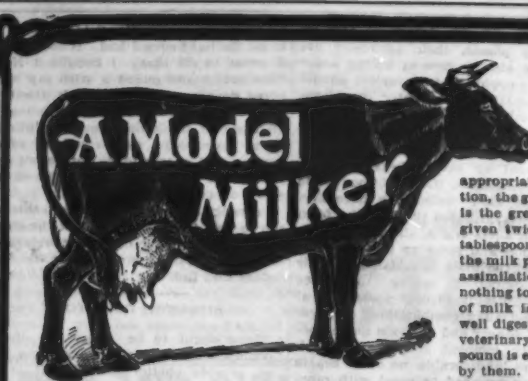
THIRTY YEARS IN GINSENG.

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Dr. Hess' Stock Food

It must be good. No unprofessional manufacturer can equal Dr. Hess' Stock Food, the scientific compound for cattle, hogs, horses and sheep. Every pound sold on written guarantee; 100 pounds for \$5.00; smaller packages at a slight advance. Fed in small doses. In every package is a little yellow card entitling the purchaser to personal advice and free prescriptions, for any animal, from the eminent veterinarian, Dr. Hess. Otherwise this personal advice would cost many dollars.

On diseases of animals and poultry, the only complete treatise for popular use, consulted and recommended by prominent veterinarians, will be sent free, postpaid, if you write what stock you have; what stock food you have used, and mention this paper.

C. M. McCLAIN, Veterinary Surgeon, Jeromeville, O., says: "It is the most comprehensive work for farmers I have ever seen."

H. H. LAYMAN, Veterinary Surgeon, Latta, O., says: "In my practice I often follow suggestions given in your Veterinary Works."

We also make Dr. Hess' Veterinary Remedies, Dr. Hess' Healing Powder and Instant Loose Killer. Address

Dr. HESS & CLARK, Ashland, Ohio.

The Apilary

BEES IN WINTER.

If bees are to be wintered in the cellar they should not be placed where the hives will set back against the wall, as often frost will penetrate so as to render the hives damp, if not too cold, says the "Ploverman." Nor should they be placed on the floor, partly for the same reason and partly because they will there feel the jar of a passing team or even of one walking about on the floor. But even worse than the floor are shelves that are connected with the floor above, if the cellar is under the dwelling house or any building in which there is much moving about. A bench from a foot to eighteen inches high makes the best place for them, and we have seen them placed three tiers deep on such a bench, the hives being placed a little distance apart, and the second tier overlapping the spaces between those in the lower tier, and the third tier being directly over the first.

We do not like this method, as it is often desirable to open one or more of the hives in the bottom row. Before hives are taken in, each hive and stand should have its number plainly marked on it, that they may be returned to the same place from which they were removed. If the hives are weighed when put in and when taken out, one may know about how much honey they have consumed, and very nearly what their condition is without opening the hive. The weight of the hive should be marked on it or a memorandum made of the number and weight.

When the bees take a winter flight there should be a shallow basin with floating sticks or other arrangements so that the bees can alight there and get the water they will need, and if the water is salted at the rate of about one teaspoonful to a gallon of water, they will like it all the better. This may save them from taking too long a flight, and thus for the loss that follows when they go out if they fly far for water. The water should be placed near enough to the hive so that they will have no difficulty in finding it, and if one bee is carried to it will soon show the way to the others.

PROTECTING HIVES FROM SNOW.

Live Stock

THE BEEF CATTLE SITUATION.

Editor RURAL WORLD: The number of cattle in the United States to the 1900 population in 1890 was 85; while in 1900 it was only 77. The cattle supply has fallen off about 13 per cent since the beginning of the drouth in 1901, which would place the number per 100 population at the present time at 62.

Advances in the price of wheat a few years ago, mainly due to the speculations of Joseph Leiter, caused farmers to turn their attention from stock-raising to grain. This was shown in the increased acreage of both wheat and corn and in the decreased acreage of grass. The shortage in live-stock which resulted was confirmed last winter by the cheapness of hay and forage upon the markets as compared to the price of corn.

The continued recurrence of slumps in the cattle trade for the past two years is explained as follows:

Early in 1901 Phillips and other "bulls" manipulated the corn pit until many steers being corn-fed at that time were forced to market long before they were ripe. Immediately following came the hot winds in Kansas and Missouri, which dried up the pastures and stock water and sent in a flood of cows and calves to save them from starving.

Then the prolonged drouth spread far into the east and caused strong cattlemen, as well as speculators to continue a stream of thin cattle upon the market all fall and winter.

In the face of these heavy runs through finished cattle steadily advanced in price, and medium grades often showed an upward tendency. However, when the misleading census figures were published, when the dry spell occurred in early spring, when the beef trust agitation was sprung, when the Harris-Gates syndicate cornered corn, and when Secretary Hitchcock executed his fence removal order against the ranchmen, each time a rush of warmed-up stuff would hit the market and continue to keep prices down.

Men who could have pulled their stocks through, had they foreseen the summer's abundant grass crop, lost heart in the spring. Altogether there were thousands of cattle which went to market as many as two and three times, thus swelling the stock yards' receipts entirely out of proportion to the number that the country contained. Many cattlemen who did manage to set their stuff through winter were overstocked with it, partially fat from grass in order to realize the long-needed cash.

Finally, when the shortage was really about to assert itself, and feeders were selling in Kansas City as high as \$5.50 per cwt., and fat cattle were soaring around \$4 cents per pound, a very high official connected with the department of agriculture at Washington rushed into print and more than once declared that the country was soon to have cheap beef.

This, coupled with the disaster to the cottonseed outlook and the drouth in Texas and Colorado caused the market to decline in well-finished beef. After that the price of medium grades will begin to advance.

The government statistician at Washington has withheld his annual estimate since three years ago; but the Treasury Bureau of Statistics recently warned the people of a shortage of more than a million head of beefed steers in the five principal feeding states.

The heavy corn crop this year is wholly confined to the severe portions of last year's drouth, there being an inferior crop in the eastern and northern states to what they raised last season. Moreover the crib and elevator are all empty and the demand from the glucose and whiskey factories for export is keen.

Considering the excessive numbers of calves recently slaughtered, their tender meat supplying the absence of thoroughly finished beef, and noting the general scarcity of beefed cattle of all kinds, I regard the outlook for cattle raising better than it has been for 30 years.

Bowling Green, Mo. S. O. CRAIG.

HORNLESS CATTLE.

[Introductory to "Polled Cattle," the September quarterly report of the Kansas State Board of Agriculture, by Secretary F. D. Coburn.]

Aside from mention of the numerous DATE CLAIMS FOR LIVE STOCK SALES.

Claim dates for public sales will be published in this column free, when such sales are to be advertised in the RURAL WORLD. Otherwise they will be charged at regular rates.

BERKSHIRE SWINE.

Feb. 13.—Biltmore Farm's annual sale of Berkshire brood sows, Biltmore, N. C. HEREFORDS.

December 4-5.—American Hereford Breeders' Association, Chicago, Ill. Week of International Live Stock Exhibition.

December 13.—J. E. Logan and Benton Gabbert & Sons, Hereford, Kansas City, Mo.

December 10.—T. H. Pugh, Hereford, Kansas City, Mo.

January 20-21, 1903.—T. F. B. Sotham, Hereford, Kansas City, Mo.

January 23-24.—Combination sale of Hereford at Chicago.

January 15-17, 1903.—C. W. Armour and Jas. A. Funkhouser, Hereford, Kansas City, Mo.

January 23-24.—C. A. Jamison and others, Peoria, Ill., at Chicago.

February 10, 11, 12, 1903.—C. A. Stannard and others, Hereford, at Oklahoma City, O. T.

February 24-25, 1903.—C. A. Stannard and others, Hereford, Kansas City, Mo.

May 6-7, 1903.—Colin Cameron, Hereford, Kansas City, Mo.

ANGUS.

April 7-5, 1903.—W. C. McGavock, Mgr., Aberdeen Angus, Kansas City, Mo.

SHORTHORNS.

December 14.—Gifford Bros., Milford, Kan., at Manhattan, Kan.

February 10-11.—Col. G. M. Casey, Clinton, Mo., and T. J. Wornell & Son, Liberty, Mo., at Kansas City.

February 17.—D. K. Kellerman & Son, Mound City, Kan., at Kansas City.

February 18-19.—I. M. Forbes & Son, at Chicago, Ill.

H. J. Hughes, Secretary.

Calves

That

Scour

and varied merits the breeds of hornless cattle may possess, their advocates are abundantly able to present telling arguments as to why their favorites should be given equal if not greater consideration than others.

In olden times, when cattle ran wild in forest and wilderness, constantly exposed to assault by savage beasts as untamed as themselves, the conditions made weapons for their defense a necessity. Nature wisely provided these in the form of horns, of such length, strength, sharpness, position and poise as to render for good reason the most formidable of their assailants impotent before the fierce charges and deadly thrusts of bayonet, saber, dagger and harpoon made possible. Every moment subject to attack and dangers innumerable, no other beasts were better equipped to repel with murderous measure enemies, even the most ferocious.

In the onward march of civilization, however, cattle have become domesticated animals, kept strictly for men's uses, in pastures, paddocks, sheds or stalls, where peace, quiet and harmonious herding mean enhanced well-being to the animals themselves and profit to their civilized owners. In the economy of cattle-husbandry protection from wild beasts no longer requires consideration and weapons of defense and attack should rightly be no more requisite for a well-bred bovine than a six-shooter for a blaster of Mercy. In our time cattle may be in a few rare instances kept for pleasure alone, but ninety-nine one-hundredths of those who rear them do so in hope of profit.

The cow and ox of earlier ages doubtless needed their armature of horns; practice with them upon their fellows increased proficiency in their use, and, by eliminating the weaklings, maintained equilibrium of numbers while promoting survival of the fittest. Conditions in the twentieth century are different; may it not become the cattle-raiser's of our generation to readjust their methods and business along lines which all enlightened experience shows to be not only more humane but more profitable as well? The highest intelligence would seem to suggest if not dictate a management most likely to result in the largest return for the least risk and smallest outlay.

Few will seriously deny that horns on the head of any animal of the cattle kind past a year old are simply instruments for inflicting needless pain, great injury and perhaps death on other brute kind and mankind at any hour of the day or night; not for reason, not for cause, not for provocation, but to gratify the passing whim, the fancied displeasure, or the desire for display of their possessor's strength; perhaps in play, perhaps in passion; and the disposition so big in all animal creation to dominate if not to dominate.

It is estimated, by those who have paid most attention to stock statistics, that not less than two hundred persons in the United States each year are killed or seriously injured by cattle horns, and that by the same means a hundred thousand cattle, horses and colts and innumerable sheep and swine are annually destroyed, that two-thirds or three-fourths of all the tremendous losses by abortion, especially among cows, and in large degree other stock, if carefully investigated could, directly or indirectly, be traced to the presence of horns; further, that in railroad transportation of horned cattle injured by the shambles, and hence when at their very maximum of value, one or more animals in nearly every carload are horn-gouged or bruised in such a way that, if then discovered, there is a reduction in the price made by the buyer, and, if it is not noticeable until shipping time, the animal is usually destroyed on the dressed carcass, entails a loss on the butcher or packer. In connection with these minor injuries must of course be considered the many animals lost outright in shipment, by being hooked down or prevented by their own and others' horns from regaining their feet after lying or being thrown down, and so on, trampled, gored or crushed to death, to bring, then, only the trifling offered for them by the grease factories.

He is indeed a clever expert who can appraise the loss in shed room, feed and flesh on the large numbers of the weaklings that the few sometimes one or two—stronger, in every herd in winter quarters are kept in such a state of terror, in motion, and separated much of the time from shelter, food, and water. Who has not seen the vicious old sturpenter that kept a score of her better moving out of a shed in a howl of feed-ruck or watering place, accommodations which, apart from the horns of this daughter of the devil, were ample for the well-being of all? Who can measure the diminished secretion of milk in every dairy herd where the cows with the biggest or sharpest horns make life a burden and death a restful consummation for their more timid and weaker sisters? Who can gauge the additional cost and area of shelter and the increased feed requisite to house and keep profitably and comfortably the cattle on the farms and in the herds where they gorge and gore and rip and run each the one next weaker, as compared with the cost of caring for the same number unarméd, dwelling contentedly in compact quarters such as their size, number, and comfort, rather than strength and viciousness, demand?

If such conditions as those outlined present a problem to the stockman, surely he may find it simplified if not wholly solved through the rearing of cattle harmless because hornless—peaceable because polled.

SILAGE FOR BEEF CATTLE.

As a new beginner with the silo, I may not be able to give enough information to be worth publishing. You be the judge and I will be satisfied. I built two silos last season, fed the last of about 130 tons the 19th of May. I fed it mostly to 6-months old calves bought last October. They were in good condition, 250 pounds were fat and had the run of young timothy until December 1, when I put them in the barn and commenced to feed silage. I fed in the winter 30 pounds silage per head per day to forty head; also five pounds of grain, consisting of three pounds crushed corn and one pound each of bran and oil meal. They weighed when turned on pasture 550 average pounds.

As to construction, I laid a stone foundation six inches in ground and six inches above ground, then set 2x4 studding 12 inches apart from center; 12 and 12 feet long, alternating joints; had fencing lumber ripped and dressed, nailing on inside of studding one thickness, then put tarred paper on and then put on the other thickness of lumber, breaking joints. They are 25½ feet high, 15 feet in diameter. For

filling, I used common field corn. I put in all the light corn I had. It took almost 25 acres to fill them. I bought a No. 13 Ohio cutter and pulled it with my eight-horse gasoline engine. It took about ten days, with three teams and five men to fill them. I think they could be filled in about seven days, as we had all of our feeding and churning to do before we commenced in the morning and had to quit early of evenings.

SHELTER FOR STOCK.

There ought to be a law to prevent farmers keeping more stock than they can provide shelter for. But it is not always for want of stable room that many farmers allow their cattle and hogs to go without protection. In some cases it is nothing short of downright carelessness; in others something like ignorance. The writer, of course, has reference to climates where shelter is needed, and without which live stock is likely to suffer. When the temperature falls near zero an animal will suffer more than most people suspect from cold rains and sleet and being compelled to sleep on the frozen ground. In this neighborhood there is a man who is known as a good farmer as well as a thorough Christian. Last fall he built a fine large sheephouse on his farm, and, as he had only a few sheep which he kept in the basement of his barn, he allowed the sheephouse to stand idle all winter while a number of young cattle went without shelter of any kind. The only excuse for this was that the sheephouse is a little distance from his dwelling-house—too far to go to do the feeding.

There might have been hired someone to do his feeding for less than what he lost by allowing his stock to go without shelter.—"Agricultural Epitomist."

The practice of dishorning cattle is growing in public favor every year. About the only question that now arises is what is the best knife for doing the job. We are very glad in this connection to call the attention of our readers to the ad. of George Webster which appears on page George Webster which appears on this page.

Mr. Webster has been long and favorably known as the manufacturer of the Convex Dishorner. This year he has brought out in addition a brand new "V-Knife," which he calls the "Bully-V." It is the strongest and most powerful "V-Knife" on the market. The driving cords on the handles are made on eccentric, so that the greatest power is exerted at the outset when the hard surface of the horn is attacked.

Write for his complete catalogue. Address George Webster, Christiansburg, Pa., and mention this paper.

STOCK NOTES.

Messrs. B. B. Thurmond & Bro. of Auxvasse, Mo., are advertising some nice Jersey-Jersey boars old enough for service, and sows ready to breed at live and let live prices. If you want anything in this line look up their advertisement and write them for further particulars.

The J. R. Young Poland China sale at Richards, Mo., on Nov. 23, was a record breaker for this fall, making an average of \$54.40 on 49 head. Coles, Ross, Correll & McCrackin, the auctioneers, did excellent work and the offering was all. The following is a list of buyers and prices of all that brought \$25 or over:

1. W. Turner, Lottimer, Ia.	408
2. N. E. Mosler, Salisbury, Mo.	408
3. A. E. Pogue, Finley, Ill.	408
4. Dietrich & Spalding, Richmond, Kas.	41
5. W. J. McKinney, Arcola, Kas.	56
6. J. Mains, Okla. Kas.	56
7. W. R. Turner, Lottimer, Ia.	103
8. E. E. Axline, Oak Grove, Mo.	103
9. A. E. McCann, Modok, Mo.	103
10. W. R. Turner, Lottimer, Ia.	103
11. W. R. Turner, Lottimer, Ia.	103
12. J. R. Brooder, Williamsport, Ind.	113
13. Dietrich & Spalding, Richmond, Kas.	113
14. J. E. Scott, Freeman, Mo.	113
15. F. E. Freeman, Freeman, Mo.	113
16. A. E. Axline, Oak Grove, Mo.	113
17. Miller Bros., New London, Ia.	113
18. A. E. Shooly, Austin, Mo.	113
19. A. E. Shooly, Austin, Mo.	113
20. E. A. Paschal, Amsterdam, Mo.	113
21. W. R. Turner, Lottimer, Ia.	113
22. W. R. Turner, Lottimer, Ia.	113
23. W. R. Turner, Lottimer, Ia.	113
24. M. L. Fullenwider, Eldorado, Kas.	113
25. E. E. Axline, Oak Grove, Mo.	113
26. E. E. Axline, Oak Grove, Mo.	113
27. E. E. Axline, Oak Grove, Mo.	113
28. E. E. Axline, Oak Grove, Mo.	113
29. E. E. Axline, Oak Grove, Mo.	113
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DISPERSION OF MAPLE GLEN HEREFORDS.

This has been a business herd, but owing to my two farms being ten miles apart I cannot give the best of attention to it. I am overstocked. All things considered, I think it will be best to disperse this herd, with the exception, perhaps, of an old cow or two and a few calves.

My purchases were the grand breeding cows and young stock animals of the Elmendorf—being half sister to Earl Daylight, daughters of May Flower, and also include females out of my best breeding cows, sold in my 1900 sale. These have calf by side and are in calf to Lucifer—the bull that stood at head of first prize young herd at Hamilton's 1900 show.

There are thirteen head of imported animals, sired by England's greatest bulls. Six head of cows are the dams of winning animals at England's big shows, including the mother of Imp. Bruce, sold to O. Harris for \$1,800, also the dam of Earl of Hamilton, the best bull in America competing for the title of champion, sired by the "Lower Eaton" estate.

Owing to the high price of feed and as the past year was rather a hard one, these cattle will not be in high condition, the flesh being made entirely on grass (except the last three weeks) which is the best possible condition for breeding usefulness.

This offering includes some unrivaled cows, that have produced the best on either side of the water. Those wanting a high class of tried females, not strains, but sired by such bulls as Earl of Shad-

land 80th, Sir Bartle Frere, Diplomat, Archibald, Lord Daylight, Lucifer, and Missouri Lad by St. Louis out of Armo's Maid 25th; and out of such well-known cows as May Flower, Fairy (dam of Frolic), old Lotta, and others of equal merit, will find this a golden opportunity, as my oldest ones are due to calve in 11 months from date of birth of last calf.

The combination shorthorn sale at Kansas City, Mo., on Nov. 23-24, with representative cattle from the herds of Messrs. F. M. Marshall, Blackwater, Mo., S. W. Roberts, Pleasant Green, Mo., and W. P. Harned, Vermont, Mo., was very poorly attended and many of the animals were too thin in flesh to sell to best advantage.

The sale was topped by Mr. Marshall's Scotch cow, Bashful 6th, and heifer calf; they went to T. J. Wornell & Son for \$430. The lowest price was \$50 for a suckling calf. 56 head brought \$3,546—average \$63.33. 75 cows brought \$7,310—average \$97.46. 11 bulls brought \$1,235—average \$112.27.

Peabody Farm, situated five miles south of Marshall, Mo., has been the home and birthplace of some of the best shorthorn cattle and Berkshire swine in the west for the past 35 years. The proprietor, Mr. J. K. King, is offering at private sale three-year-olds—a red by Duke of Lorraine 4th, 1873, Dam Wild Eyes 44, by Waterloo Duke 1843, tracing to Imported Wild Eyes 4th, by 14th Duke of Oxford. Here is a fine bull that is close to the ground and of splendid conformation and worthy a home at the head of a good herd of cows. This is a splendid chance to get a bull backed up with individuality, style and finish.

There are also two roan yearlings by Duke of Lorraine 4th, dams the Countess and Countess, by Kirkcubright, Duke of Wooddale, the bull Mr. King sold Mr. Guthrie for \$1,000 after raising and selling \$10,000 worth of his got. These two bulls are good, strong useful animals that ought to be siring some good calves, as they are the low-down beefy type and can be bought cheap enough to raise steers from.

Lord Charmer 2nd 5495, a Gentry bred boar and out of Duchess Lee and Nora family of sows and they are being bred to Messrs. Harris & McManahan's Champion show boar of this year, Lord Lee; also a very promising young Gentry bred boar, Premium Duke of Peabody. Mr. King has an offering of young Berkshire sows when safe in pig to these two boars, and they should find ready sale when ready to ship. These 28 animals are first-class in every respect and being bred to such excellent boars should produce something fancy. If it was of animals of this class, write Mr. King stating where you saw this advertisement; or better still, visit Peabody Farm and examine the stock.

ST. LOUIS NATIONAL STOCK YARDS. Market Report Published by Evans-Bird-Dust Company.

Receipts of cattle fairly liberal here for the week the trade was very uneven and unsatisfactory. The demand from all sources for beef cattle was weak and prices show but little change from the close of last week. Best native beef steers strictly fancy, 1300/1700 lbs., \$4.70/5.07; choice export steers, 1000/1100 lbs., \$3.50/3.80; good shipping and export steers, 1200/1400 lbs., \$3.00/3.75; fair to medium shipping steers, 1000/1200 lbs., \$2.75/3.25; steers, 1000/1200 lbs., rough to best \$4.00/4.50; steers, 1000/1100 lbs., \$3.75/4.25; steers, less than 1000 lbs., \$3.50/4.00; fancy corn fed heifers, \$4.00/4.50; good to choice heifers, \$3.50/4.00; good fat grass heifers, \$3.75/4.25; best corn fed heavy cows, \$3.50/4.00; good fat medium weight cows, \$3.75/4.25; medium fat cows, \$3.50/4.00; heavy weight canners, \$2.00/2.50; fair to medium canners, \$1.50/2.00; common and shelly cows, \$1.00/1.50; choice corn-fed bulls, \$4.00/4.50; good fat bulls, \$3.50/4.00; sows, \$2.50/3.00; good stock cows, \$3.00/3.50; dehorned bulls for feeding, \$2.00/2.50; choice veals, 1000/1200 lbs., \$4.50/5.00; heavy fat veals, \$4.00/4.50; good heifers, \$3.00/3.50; thin heifers, \$2.00/2.50; good to choice feeders, 1000/1100 lbs., \$3.50/4.00; medium to good feeders, 800/1000 lbs., \$2.40/2.90; fair to medium feeders, 700/900 lbs., \$2.00/2.50; good quality stockers, 600/750 lbs., \$2.25/2.75; fair quality stockers, 500/650 lbs., \$2.00/2.50; common steers \$2.75/3.25; good to choice stock heifers \$3.50/4.00; good to choice stock heifers, \$3.50/4.00; medium stock heifers, \$3.00/3.50; common stock heifers, \$2.00/2.50; dehorned bulls for feeding, \$2.00/2.50; choice veals, 1000/1200 lbs., \$4.50/5.00; heavy fat veals, \$4.00/4.50; good heifers, \$3.00/3.50; thin heifers, \$2.00/2.50; good to choice feeders, 1000/1100 lbs., \$3.50/4.00; medium to good feeders, 800/1000 lbs., \$2.40/2.90; fair to medium feeders, 700/900 lbs., \$2.00/2.50; good quality stockers, 600/750 lbs., \$2.25/2.75; fair quality stockers, 500/650 lbs., \$2.00/2.50; common steers \$2.75/3.25; good to choice stock heifers \$3.50/4.00; good to choice stock heifers, \$3.50/4.00; medium stock heifers, \$3.00/3.50; common stock heifers, \$2.00/2.50; dehorned bulls for feeding, \$2.00/2.50; choice veals, 1000/1200 lbs., \$4.50/5.00; heavy fat veals, \$4.00/4.50; good heifers, \$3.00/3.50; thin heifers, \$2.00/2.50; good to choice feeders, 1000/1100 lbs., \$3.50/4.00; medium to good feeders, 800/1000 lbs., \$2.40/2.90; fair to medium feeders, 700/900 lbs., \$2.00/2.50; good quality stockers, 600/750 lbs., \$2.25/2.75; fair quality stockers, 500/650 lbs., \$2.00/2.50; common steers \$2.75/3.25; good to choice stock heifers \$3.50/4.00; good to choice stock heifers, \$3.50/

